

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

1440

PCT

To:

Outokumpu OYJ Intellectual
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NOTIFICATION OF TRANSMITTAL OF INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing
(day/month/year) **09-12-2003**

Applicant's or agent's file reference
20012582 WO

IMPORTANT NOTIFICATION

International application No. PCT/FI02/01036	International filing date (day/month/year) 18-12-2002	Priority date (day/month/year) 28-12-2001
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Applicant
**Outokumpu Oyj
et al**

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 20012582 WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/FI02/01036	International filing date (<i>day/month/year</i>) 18.12.2002	Priority date (<i>day/month/year</i>) 28.12.2001
International Patent Classification (IPC) or national classification and IPC7 B22D 11/041		
Applicant Outokumpu Oyj et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 13.06.2003	Date of completion of this report 02.12.2003
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. 08-667 72 88	Authorized officer Lars Ekeberg/MP Telephone No. 08-782 25 00

I. Basis of the report**1. With regard to the elements of the international application:***

- ☒ the international application as originally filed
- ☐ the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the claims:
pages _____, as originally filed
pages _____, as amended (together with any statement) under article 19
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the drawings:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheet/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2 (c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	<u>1-6</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>1-6</u>	YES
	Claims		NO
Industrial applicability (IA)	Claims	<u>1-6</u>	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Reference is made to the following documents:

D1: US 3 381 741

D2: US 3 435 881

The claimed invention relates to an apparatus for continuous vertical casting of metal strips. The apparatus comprises a mould and an open ended mould cavity, which has a mould entrance opening at the top end and a strip exit opening at the bottom. A tundish for holding molten metal, has a discharge opening in direct communication with the mould cavity to feed molten metal into the mould entrance opening past an interface between the tundish and the mould. The invention aims at avoiding the problem of molten metal entering this interface. This is solved by using a sealing element formed of a sheet of graphite. The sealing element is placed between, and in immediate contact with, the tundish and the mould.

The document D1 is regarded as being the closest prior art to the subject-matter of claim 1 and discloses an apparatus for continuous casting of ingots. The apparatus includes an insert (22), which may be formed of a sheet of graphite. This sheet (22) is, however, part of a more complex sealing and heat insulating construction, and the sheet is not in contact with the tundish.

D1 has, therefore, been re-evaluated since the establishment of the International Search Report and is no longer considered to be of particular relevance with respect to claims 1-6.

D2 discloses a mould for continuously casting of metal. D2

.../...

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Box V

aims at solving problems relating to heat conduction and is not at all related to the subject matter of claim 1. Since D1 has been re-evaluated the importance of D2 has also been reconsidered. D2 can not be considered to be of particular relevance to any of the claims when taken alone, the re-evaluation of D1 has therefore lead to that both D1 and D2 shall be considered as plain prior art documents.

All cited documents represent the general state of the art. The invention defined in claims 1-6 is not disclosed by any of these documents.

The cited prior art does not give any indication that would lead a person skilled in the art to the apparatus for continuous vertical casting. Therefore, the claimed invention is not obvious to a person skilled in the art.

Accordingly, the invention defined in claims 1-6 is novel and is considered to involve an inventive step. The invention is industrially applicable.